



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/872,059	06/01/2001	Lin Yang	6024-003	2292
32566	7590	12/19/2005	EXAMINER	
PATENT LAW GROUP LLP			MOORE, IAN N	
2635 NORTH FIRST STREET			ART UNIT	
SUITE 223			PAPER NUMBER	
SAN JOSE, CA 95134			2661	

DATE MAILED: 12/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No. 

09/872,059

Applicant(s)

YANG ET AL.

Examiner

Ian N. Moore

Art Unit

2661

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 December 2005.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☒ Claim(s) 1-5 is/are allowed.
6) ☒ Claim(s) 6-10 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. Claim 6-10 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter on the basis of the claim invention preempts an abstract idea (§ 101 Judicial exceptions).

Claim 6 discloses **a system** estimating timing of at least one of the beginning and the end of a received signal in the presence of time day in a signal transmission channel in an OFDM system, **the system comprising a computer that is programmed:**

to provide... $P_N(t;K)$...; to receive... $R_c(t)$...; to form a composite signal... $R_c(t)$; to form a remainder signal...; and to determine....

As described above, claim 6 recites a system discloses comprising a computer that is programmed to perform series of mathematical formula process/step (i.e. to provide... $P_N(t;K)$, to receive... $R_c(t)$, to from...) without any substantial practical application. Thus, the claimed series of steps cover every substantial practical application of an abstract idea, thereby; the claim invention preempts a 101 judicial exception of abstract idea.

For claims including such excluded subject matter to be eligible, the claim must be for a practical application of the abstract idea, law of nature, or natural phenomenon. Diehr, 450 U.S. at 187, 209 USPQ at 8 (“application of a law of nature or mathematical formula to a known structure or process may well be deserving of patent protection.”); Benson, 409 U.S. at 71, 175 USPQ at 676 (rejecting formula claim because it “has no substantial practical application”). The

Art Unit: 2661

claimed does not in reality “seek[] patent protection for that formula in the abstract.” Diehr, 450 U.S. at 191, 209 USPQ at 10. “Phenomena of nature, though just discovered, mental processes, abstract intellectual concepts are not patentable, as they are the basic tools of scientific and technological work.” Benson, 409 U.S. at 67, 175 USPQ at 675. One may not patent a process that comprises every “substantial practical application” of an abstract idea, because such a patent “in practical effect would be a patent on the [abstract idea] itself.” Benson, 409 U.S. at 71-72, 175 USPQ at 676; cf. Diehr, 450 U.S. at 187, 209 USPQ at 8 (stressing that the patent applicants in that case did “not seek to pre-empt the use of [an] equation,” but instead sought only to “foreclose from others the use of that equation in conjunction with all of the other steps in their claimed process”). “To hold otherwise would allow a competent draftsman to evade the recognized limitations on the type of subject matter eligible for patent protection.” Diehr, 450 U.S. at 192, 209 USPQ at 10. Thus, a claim that recites a computer that solely calculates a mathematical formula (see Benson) or a computer disk that solely stores a mathematical formula is not directed to the type of subject matter eligible for patent protection.

If the “acts” of a claimed process manipulate only numbers, abstract concepts or ideas, or signals representing any of the foregoing, the acts are not being applied to appropriate subject matter. Schrader, 22 F.3d at 294-95, 30 USPQ2d at 1458-59. Thus, a process consisting solely of mathematical operations, i.e., converting one set of numbers into another set of numbers, does not manipulate appropriate subject matter and thus cannot constitute a statutory process.

In accordance with MPEP (see MPEP 2106), in practical terms, claims define nonstatutory processes if they:

– consist solely of mathematical operations without some claimed practical application (i.e., executing a “mathematical algorithm”); or

– simply manipulate abstract ideas, e.g., a bid (Schrader, 22 F.3d at 293-94, 30 USPQ2d at 1458-59) or a bubble hierarchy (Warmerdam, 33 F.3d at 1360, 31USPQ2d at 1759), **without some claimed practical application.**

Therefore, it is clear that the claimed invention preempts a § 101 judicial exception of the abstraction since the processes set forth in the claim 6 covers every substantial practical application thereof (emphasis added).

Claims 7-10 are also rejected for the same reason as stated above.

Response to Arguments

3. Applicant’s arguments see pages 6-10, filed 12-5-05, with respect to **claims 1-5** have been fully considered and are persuasive. The rejection of claims 1-5 has been withdrawn.

4. Applicant's arguments filed 12-5-05, regarding **claim 6** (i.e. a system discloses comprising a computer that is programmed), have been fully considered but they are not persuasive.

Regarding claim 6, the applicant argues that “...claim 6 meets the statutory subject matter requirement under 101 by reciting “to determine from the remainder signal at least one time at which selected sequence PN.... associated with said at least one receive padded signal frame begins in the received signal $R_c(t)$when considered as a whole, provides a “time” value a useful, concrete and tangible result and the claim invention as a whole accomplishes a practical application...” in page 13, paragraph 2.

In response to argument, examiner respectively disagrees with the above applicant argument. "Determining from the remainder signal at least one time" is a step/process of the abstract/mathematical formula/function since there is no practical application (e.g. providing time synchronization between transmit and receive stations, or equivalent thereof). Since the claimed invention comprises series of steps with no practical application, the claimed series of steps cover every substantial practical application of an abstract idea, thereby; the claim invention preempts a 101 judicial exception of abstract idea. Thus, claim 6 is non-statutory.

Allowable Subject Matter

5. Claims 1-5 are allowed.
6. The following is a statement of reasons for the indication of allowable subject matter:

Claims 1-5 are allowable over the prior art of record since the cited reference taken individually or in combination fails to particularly disclose the following italic limitations:

In claim 1, ...*forming a remainder signal...and determining from the remainder signal at least one time at which said selected sequence $PN(t,k)$ ($k=K1,K1+1,...,k2$) associated with said at least one padded signal frame begins in the received signal $Rc(t)$...* in combination with other limitations recited as specified in Claim 1.

Note that the closet prior art Kleider (US006487252B1) discloses a method of estimating timing of at least one of the beginning and the end of a transmitted signal segment in the presence of time delay in a signal transmission channel in an OFDM system, the method comprising the steps of providing a set of pseudo-random signal m-sequence for which a convolution signal, appending a selected PN from the set of PN sequence to form a padded

Art Unit: 2661

frame, transmitting at least one padded frame, receiving a received signal; see FIG. 1,3,2,6; see col. 5, line 40 to col. 8, line 60.

Kleider fails to disclose forming a remainder signal from received signal and composite signal and determining from the remainder signal a sequence PN begins in the receive frame. Thus, Kleider fails to disclose or render obvious the above limitations as claimed.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ian N. Moore whose telephone number is 571-272-3085. The examiner can normally be reached on 9:00 AM- 6:00 PM.

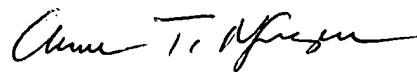
Art Unit: 2661

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau Nguyen can be reached on 571-272-3126. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

INM

gum
12/7/05



CHAU NGUYEN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600